

REMARKS

This Amendment is submitted in full response to the Outstanding Office Action dated October 20, 2004 on the merits in the above-identified Patent Application

Pursuant to the Outstanding Office Action, Claim 6 has been rejected under 35 U.S.C. § 112, second paragraph. Applicant has amended the Patent Application, as set forth above, to cancel original claims 1-6. Accordingly, the rejection of Applicant's Claim 6 has been overcome.

Claims 1-3 and 6-9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Schweickhardt, U.S. Patent No. 5,115,796.

Schweickhardt '796 discloses a diamond abrasive saw blade for dry sawing or cutting of concrete, masonry or the like. The Schweickhardt saw blade comprises a flat, circular steel plate 3 with a diamond abrasive matrix rim 7 on the outer periphery of the plate. An abrasive coating 9 is provided on at least one face of the plate 3. According to Schweickhardt, the abrasive coating 9 comprises a binder 11 having suitable abrasive particles imbedded therein and fixedly held in place by the binder. The binder may be a suitable synthetic resin material and the abrasive particles 13 may be suitable silicone carbide abrasive particles. Schweickhardt further discloses a glass fiber reinforcing mat 15 which is impregnated with the synthetic resin material and abrasive particles. The glass fiber reinforcing mat 15 is bonded to the face of the plate 3. More particularly, the substrate plate 3 includes a plurality of

apertures 19 formed through the thickness of the plate. These apertures are filled with the abrasive coating 9 for mechanically interlocking the coating 9 to the respective face of the plate 3 (see column 4, lines 19-66).

Schweickhardt fails to teach or suggest electroplating a diamond particle composite mixture to either the cutting edge of the blade or the side faces of the blade, as recited in Applicant's claim 7. In Schweickhardt, the abrasive mixtures are bonded to the cutting edge of the blade and side faces of the blade using a suitable synthetic resin material. On the side faces of the blade, Schweickhardt discloses the use of silicone carbide abrasive particles in the synthetic resin material on the side faces of the blade.

In rejecting Applicant's claims as being obvious in view of Schweickhardt, the Examiner states that one of ordinary skill would recognize the choice of electroplating to be an obvious choice in lieu of the mechanical bonding method disclosed in Schweickhardt which uses a synthetic resin in the abrasive coating. Further, the Examiner takes the position that it would be obvious to have made the segments of any size desired and, further, that one of ordinary skill would recognize that the size of the abrasive could vary greatly and is dependent on the desired surface finish and the type of material being abraded.

In the background section of the patent application, as originally filed, Applicant disclosed the problems associated with blades constructed in the manner as disclosed in Schweickhardt. Specifically, Applicant noted that abrasive blades having reinforced fiberglass mats on each side, similar to

Schweickhardt, have problems with longevity, particular when they become wet, as often happens when cutting ductile iron pipe. Applicant noted that the cutting life of an abrasive blade, such as that disclosed in Schweickhardt, is approximately seven to nine minutes of cutting time when used in the cutting of ductile iron pipe. Schweickhardt discloses use of his blade for cutting concrete, masonry and other like materials in a dry environment. The Schweickhardt blade is not suited for use in a wet environment, such as the cutting of ductile iron pipes which are normally filled or partially filled with water and at depths (below the ground surface) which are below the water table. Applicant further disclosed in the patent application as originally filed, that abrasive blades often flex during the beveling operation, and sometimes break apart due to their construction (i.e. fiberglass mat construction). It was further noted that blades of the type disclosed in Schweickhardt can disintegrate when cutting ductile iron pipe, as the fiberglass matting of the blade wears fairly quickly and, once this happens, the blade will come apart in chunks, presenting a serious risk of injury.

Schweickhardt discloses the use of the abrasive coating 9 on at least one side of the blade serving the purpose of limiting the transfer of heat to the saw blade such that the requirement of cooling water or other fluid is eliminated (see column 7, lines 37-42). Thus, according to the teachings of Schweickhardt, it is clear that the blade disclosed therein is intended for use in a dry environment and that, in fact, exposure to water is undesirable. On the other hand, Applicant's blade is specifically intended for use in wet

environments and is constructed to maintain its integrity when wet. The structure of applicant's blade, as claimed, is entirely different from the blade of Schweickhardt and is intended for use in cutting a different material (i.e. ductile iron pipe) in a completely different environment (wet rather than dry).

The Examiner notes that Schweickhardt does not teach electroplating a diamond particle composite mixture to the side face of the blade and/or the cutting edge of the blade, as claimed by Applicant. However, the Examiner takes official notice, stating that the use of electroplating to coat a surface with a metal coating, regardless of any additives, is old and well known. Notwithstanding the fact that electroplating is old and well known, an invention which comprises a new structural combination using old techniques or elements is patentable if the result that it produces is not suggested in the prior art. Virtually all inventions are combinations. Every invention is formed of old elements and many are made with the use of old techniques. In re Wright, 848 Fed. 2d 1216, 6 USPQ 2d 1959, 1961, 1962 (Fed. Cir. 1988). Applicant's claimed invention, as recited in Claim 7, is new and produces a result not suggested in Schweickhardt.

In the background of the Patent Application, as originally filed, Applicant noted the problems associated with the use of abrasive blades of the type disclosed in Schweickhardt when used in the cutting of ductile iron pipe. Applicant's blade, as claimed, solves a longstanding problem, namely the short life and disintegration of abrasive blades having fiberglass mat construction, when used in the cutting of ductile iron pipe. There is no teaching or

suggestion in Schweickhardt, or anywhere in the art, of a blade comprising a first composite mixture containing diamond particles electroplated to the cutting edge of the blade and a second composite mixture containing diamond particles electroplated to the opposite side faces of the blade, as recited in Applicant's claim 7. The motivation to make a specific structure is related to the properties or uses one skilled in the art would expect the structure to have, if made. The critical inquiry is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. In re Newell, 891 Fed.2d 899, 13 U.S.P.Q. 2d 1248, 1250 (Fed. Cir. 1989). In the instant case, there is no teaching, suggestion or motivation found in the prior art for modifying the Schweickhardt blade to provide electroplating of diamond particle composite mixtures to both the cutting edge and the side face of the blade in order to withstand the rigors of the wet environment when cutting and beveling ductile iron pipe. The Schweickhardt blade is highly effective when used to cut dry concrete, masonry or the like and does not address the problems associated with cutting and beveling ductile iron pipe in a wet environment.

It is respectfully submitted that Applicant's invention, as now claimed, is neither found, taught or suggested in the prior art. There is simply no teaching, suggestion or motivation in the prior art to modify the Schweickhardt blade to produce Applicant's blade, as claimed.


Since nowhere in the art is Applicant's invention, as now claimed, to be found, taught or suggested, it is respectfully submitted that this Application is now in condition for allowance.

For all of the reasons advanced above, the Examiner is respectfully requested to reconsider the allowability of Applicant's Claims and to pass this case to allowance.

Respectfully submitted,

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